ATTACHMENT 1 - APPENDIX A
FACILITY DESCRIPTION AND LOCATION

A1.1 NAME AND ADDRESS OF PROPOSED FACILITY

Munitions Management Device, Version 1 (MMD-1)
Building 3445
U.S. Army Dugway Proving Ground
Dugway, UT 84022

A1.2 NAME, ADDRESS, AND TELEPHONE NUMBER OF OWNER/OPERATOR OF MMD-1

Operator/Owner:

Mr. James L. Bacon
Program Manager for Chemical Demilitarization
Aberdeen Proving Ground, MD 21010-5401
(410) 436-3447

Operator(s):

Mr. Tom Bachelor, Acting Vice President, Environmental Programs
(Teledyne Brown Company Officer)
Teledyne Brown Engineering
Cummings Research Park
P.O. Box 070007
Huntsville, AL 35807-7007
(256) 726-2604

Facility Owner:

Col. Edward Fisher, Commander
U.S. Army Dugway Proving Ground
Dugway, UT 84022
(801) 831-3701/3704

A1.3 POINTS OF CONTACT

U.S. Army Project Manager Chemical Demilitarization (PMCD):

Mr. Allan Caplan
Program Manager, MMD-1
U.S. Army Program Manager Chemical Demilitarization
(410) 436-8733

U.S. Army Dugway Proving Ground:

Mr. Charles Donaldson
Test Director, MMD-1
U.S. Army Dugway Proving Ground
Dugway, UT 84022
(801) 831-5422

A1.4 GENERAL FACILITY DESCRIPTION

The MMD-1, a transportable, pre-fabricated hazardous waste treatment system, will be located inside Building 3445 at U.S. Army Dugway Proving Ground (DPG), Utah. DPG is a Major Range and Test Facility of the Department of Defense (DoD). Its assigned mission is the testing and evaluation of military materiel and military training. DPG is located in the desert, salt flats, and adjacent areas of western Utah, within Tooele County, approximately 55 miles by air southwest of Salt Lake City (**Figure A1-1**).

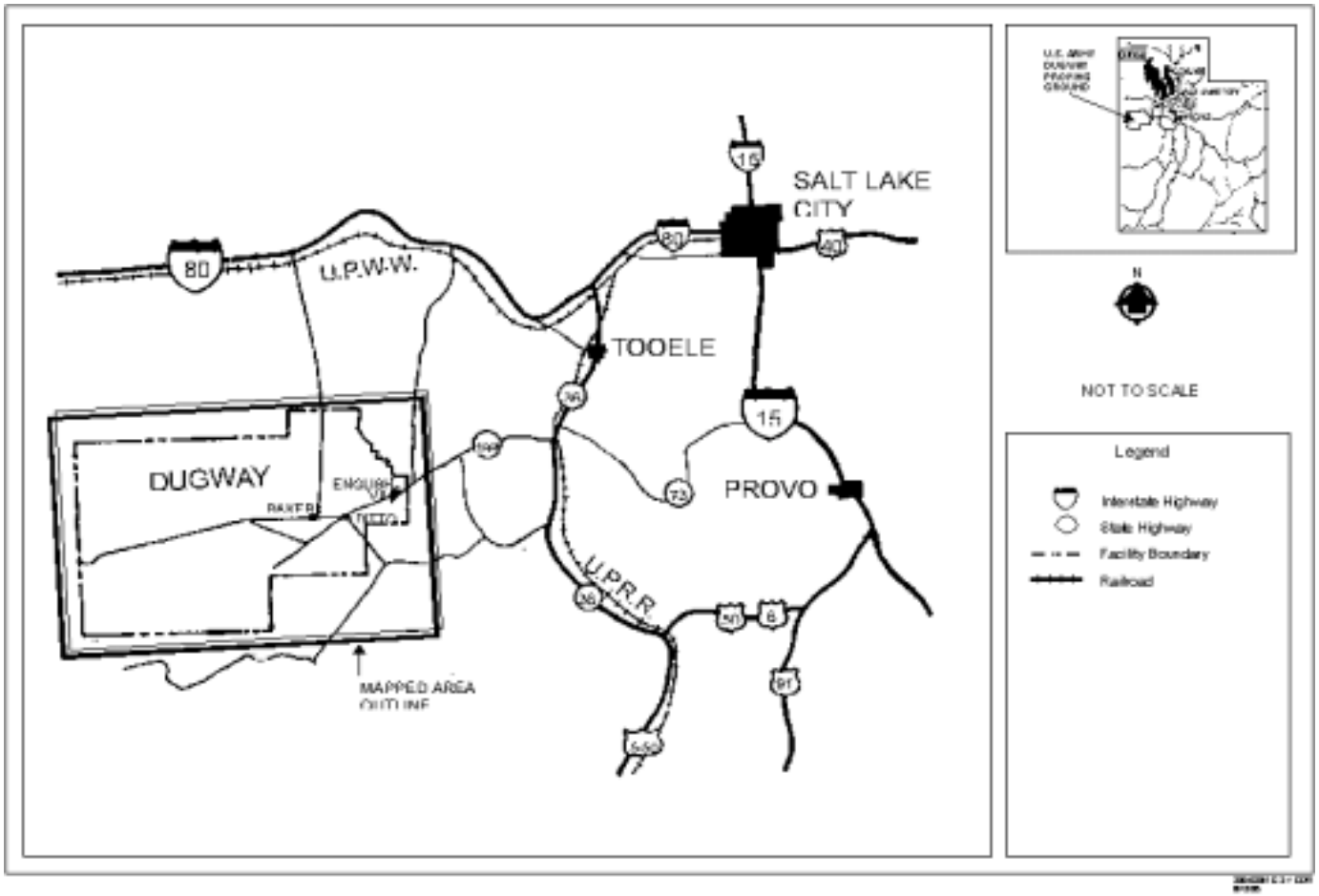


Figure A1-1 Location of U.S. Army Dugway Proving Ground in Utah

DPG covers approximately 1,255 square miles and includes mountains, valleys, and a large, flat, sparsely vegetated area that extends westward into the southern reaches of the barren salt flats of the Great Salt Lake Desert. Most of this land is unimproved, with only 300 acres of improved land and 536 acres of semi-improved land, mostly in English Village. **Figure A1-2** shows the major activity areas at DPG.

The terrain is mainly flat or gently sloping with intermittent sand dunes and small hills. The Cedar Mountain Range extends northwest from English Village, forming the northeast boundary of DPG. Little Granite Mountain, Camel Back Ridge, Wig Mountain, and Granite Mountain divide DPG into several minor areas.

A detailed description of the activities conducted at DPG is in Section 5 of the *Dugway Proving Ground RCRA Permit.*

Building 3445 is located in the Carr Facility (**Figure A1-3**). A general layout of Building 3445 is provided in **Figure A1-4**. A general schematic of the MMD-1 process trailer and equipment skids at Building 3445 and equipment layout inside the East and West Chamber is provided in **Figures A1-5** and **A1-6**, respectively. The MMD-1 system is described in detail in Section 5 of this permit application.

A1.4.1 Topographic Map

A topographic map showing the location of the MMD-1 (inside Building 3445, East and West Chambers) is provided in **Figure A1-7**. The topographic map depicts an area of 7,000 feet around Building 3445 and has a scale of 1-inch equals approximately 1,000 feet. Contours are shown at approximately 1-foot intervals. Legal boundaries are not shown for Building 3445, East Chamber because it is contained within DPG. Legal boundaries for DPG are depicted in **Figure A1-2**.

The topographic map includes map date, orientation, major structures, and roads. Access controls (gate and perimeter fencing around Building 3445) are shown in **Figure A1-3**. Several Solid Waste Management Units (SWMUs) are associated with Building 3445 and are described in and covered under DPG Installation Restoration Program documents.

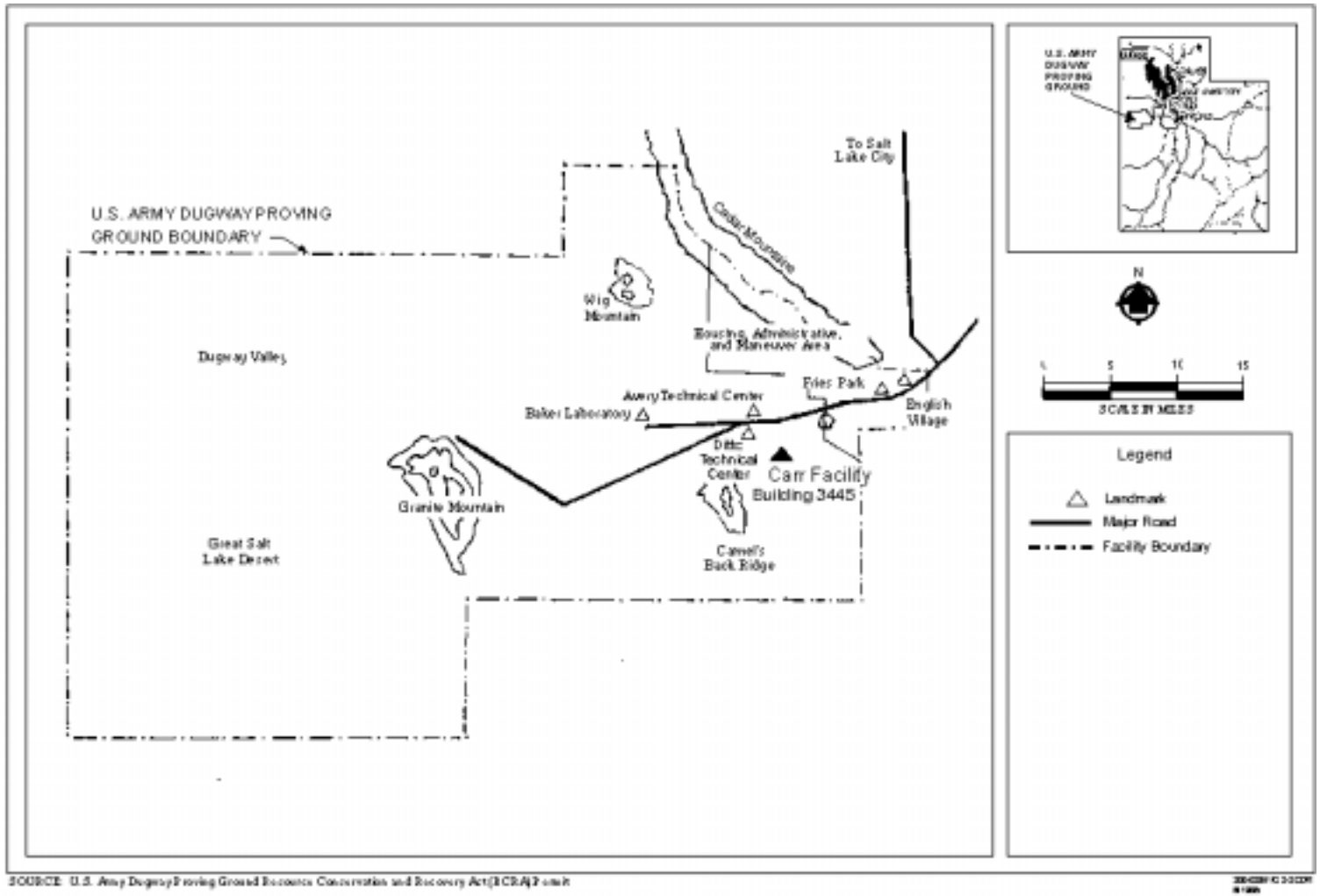


Figure A1-2. Major Activity Areas on U.S. Army Dugway Proving Ground

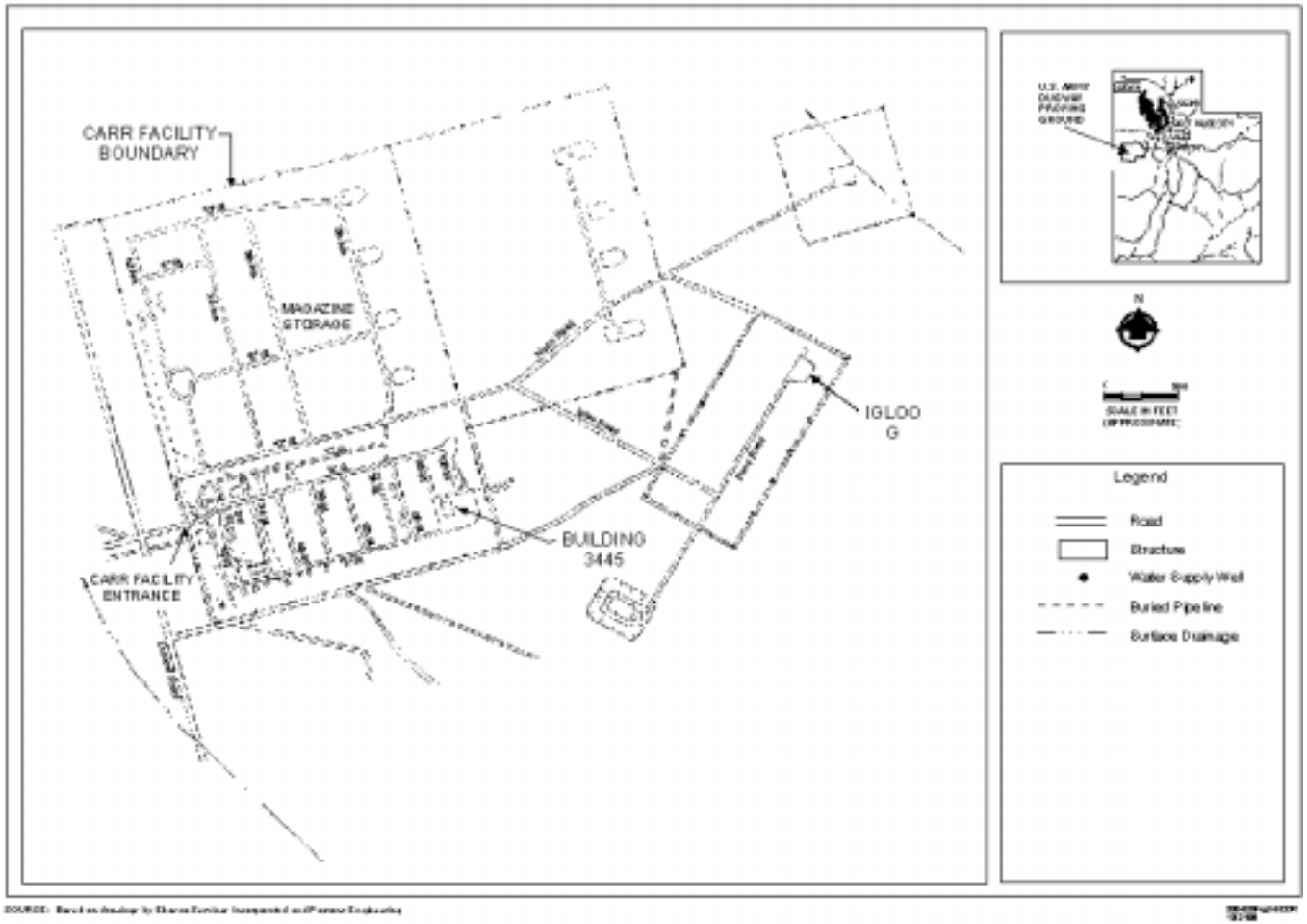


Figure A1-3. Location of Building 3445, Carr Facility

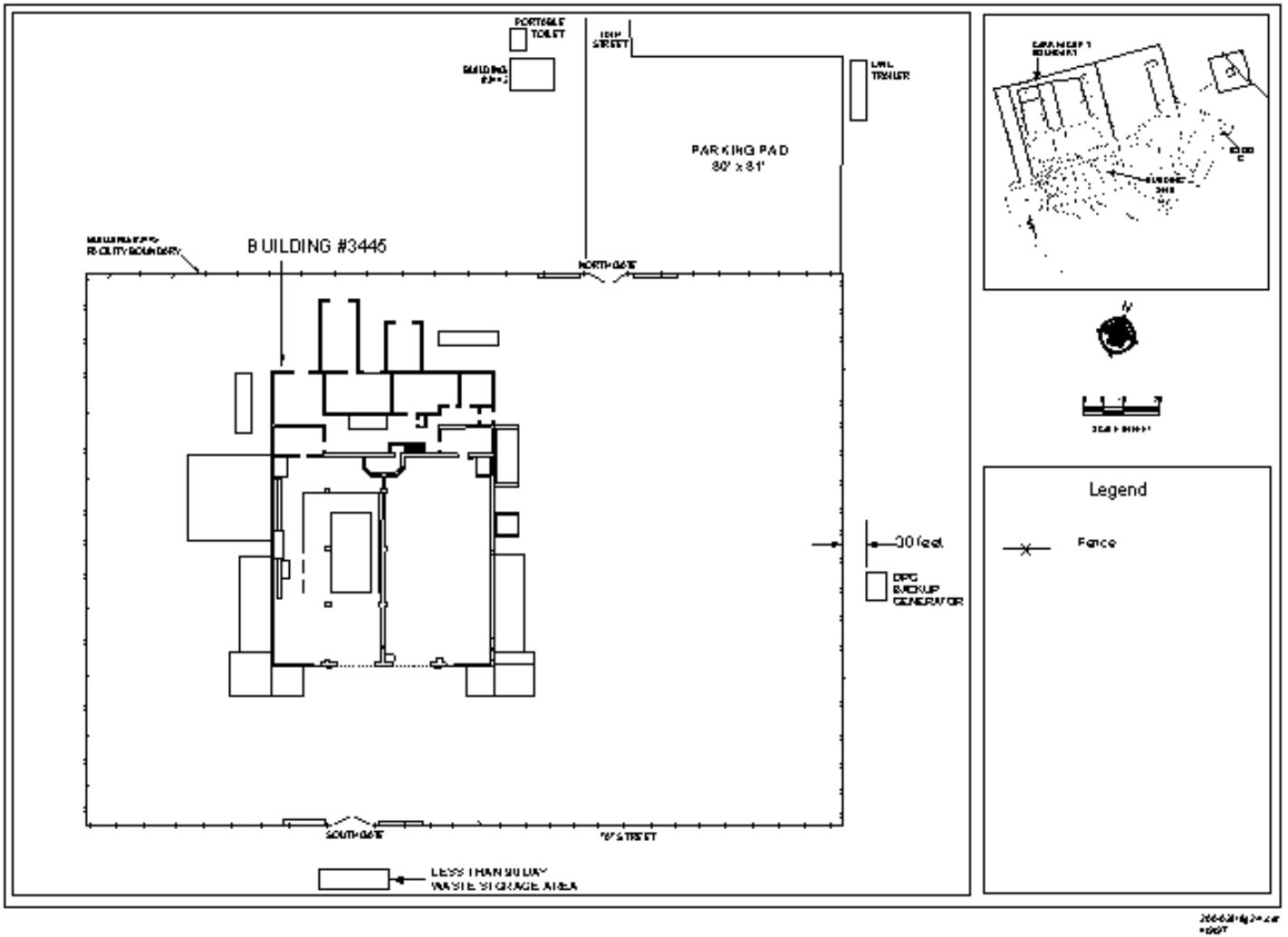


Figure A1-4. General Layout of Building 3445, Carr Facility

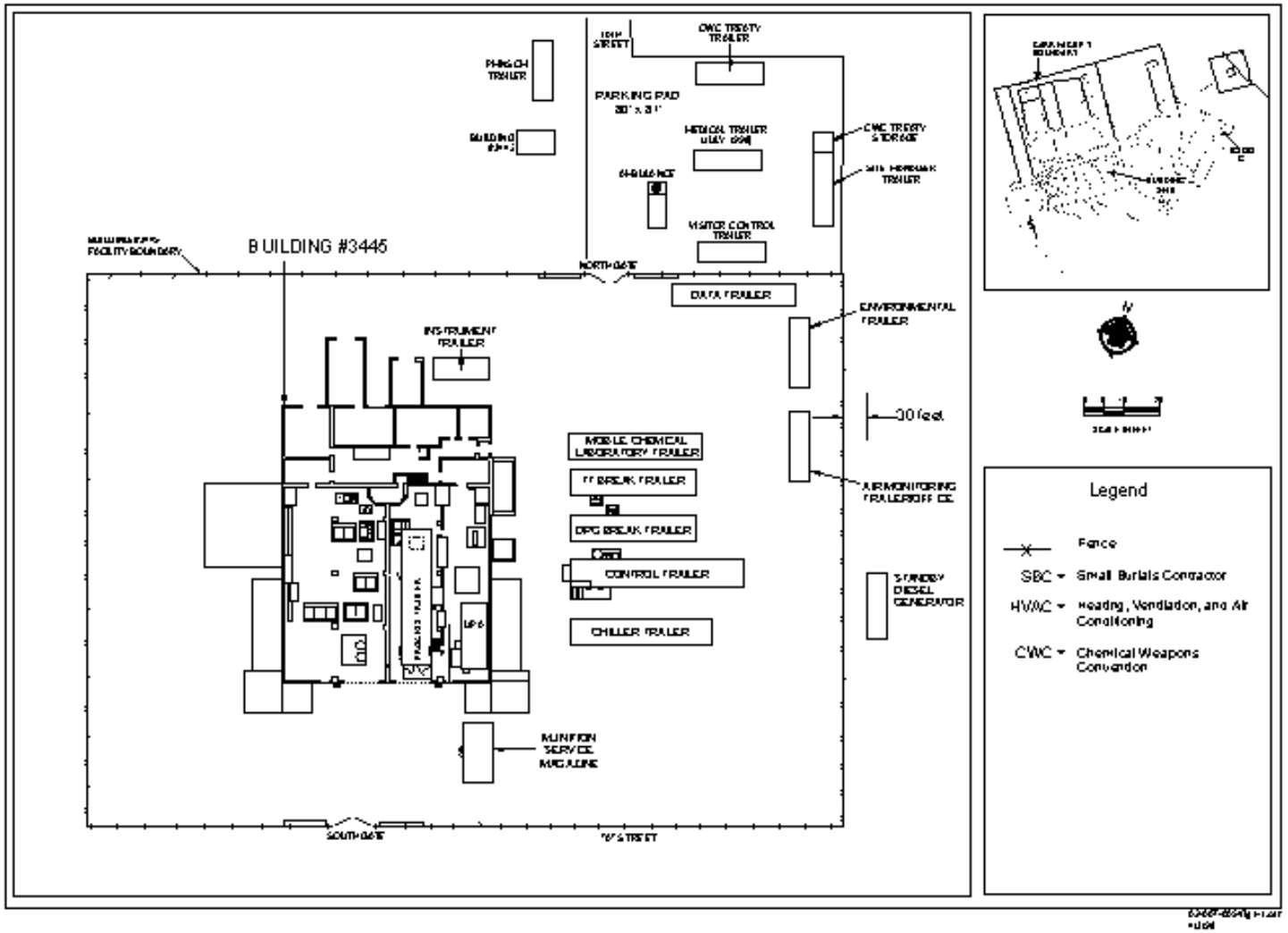


Figure A1-5 MMD-1 Equipment Layout at Building 3445

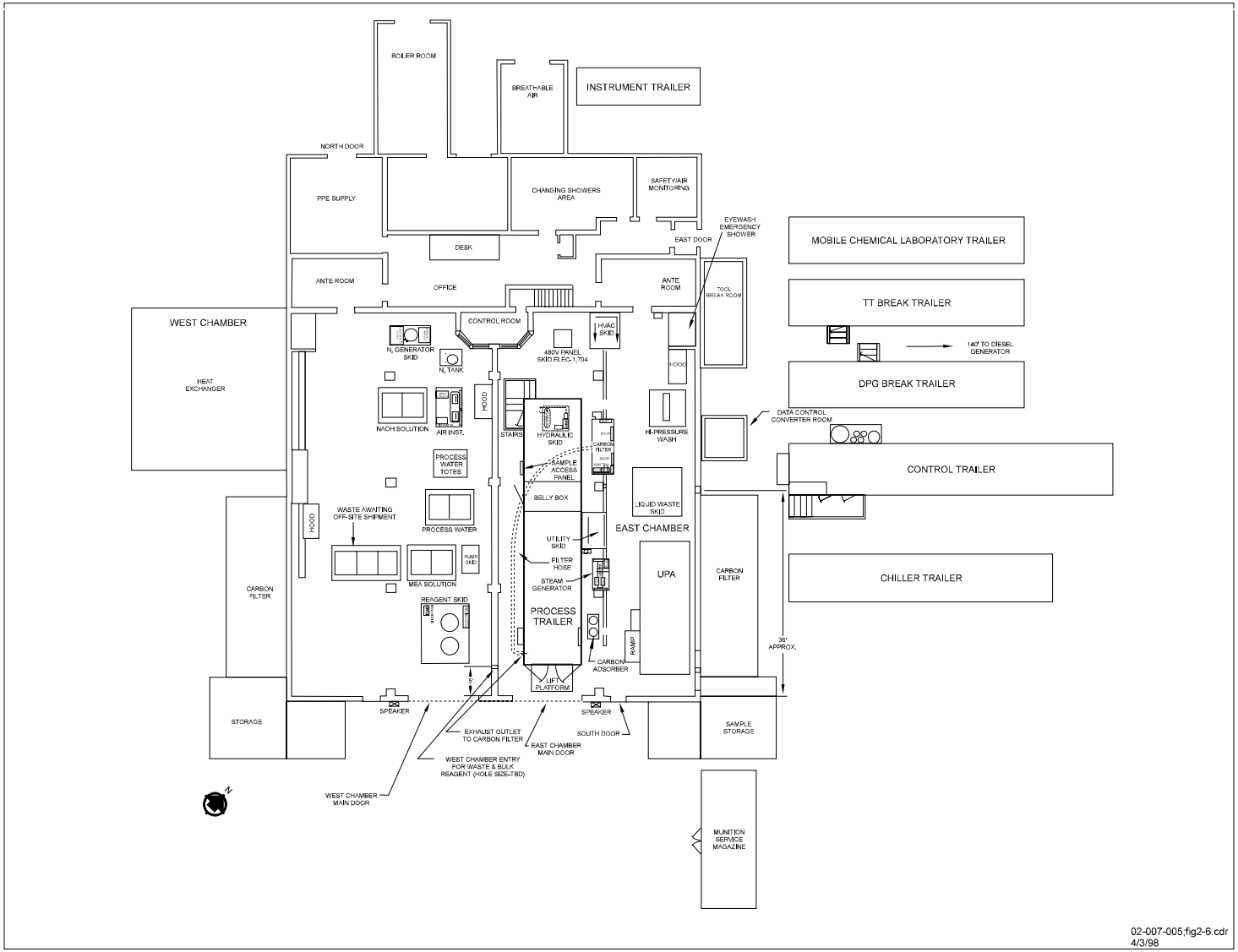


Figure A1-6. Layout of the MMD-1 in Building 3445, East Chamber

Figure A1-7. Topographic Map of Building 3445 and Surrounding Vicinity

There are no injection wells in the vicinity of Building 3445. The groundwater extraction wells closest to Building 3445 are DPG Wells Number 4 and 5. Well Number 4 is an inactive potable water well with a depth of 170 feet, located in the vicinity of B Street and 6th Avenue, approximately 800 feet from the west side of Building 3445. Well Number 5 is an active potable water well with a depth of 320 feet, located in the open storage area southwest of the Carr Facility fenceline, approximately 1,200 feet from the west side of Building 3445. The withdrawal rate of Well Number 5 is 310 gallons per minute. **Figure A1-8** shows the groundwater extraction Wells Number 4 and 5 within the Carr Facility.

Process water for the MMD-1 system will come from potable Well Number 5. Prior to use, this water will be passed through a reverse osmosis unit to remove any impurities that may hinder proper treatment reactions or equipment capabilities. Process water will be stored in two
350 gallon bulk containers, located in the Building 3445 West Chamber.

Figures A1-9 through **A1-12** are site plans depicting an area of approximately 7,000 feet around Building 3445, East Chamber, and show utility lines (water, electric, communications, and wastewater systems) that service the Carr Facility. **Figure A1-13** shows the utility lines that service Building 3445. There are no storm drain lines. A fire hydrant is located on AA@ Street, outside the Building 3445 facility fencing and at the southwest corner of the facility boundary.

A wind rose for DPG is presented in **Figure A1-14**. The dominant direction of light winds, primarily of local origin, is southeasterly at night and northwesterly during the day. The winds in the DPG vicinity are strongly influenced by local conditions, but the local influences are not noticeable when strong winds (the result of large-scale storm patterns) prevail. The winds near the mountains usually have very different local effects and do not necessarily reflect the general local patterns.

A1.4.2 Area Land Use (40 CFR 264.601; R315-8-16)

The major tracts of land in the DPG vicinity are predominantly owned by the Federal Government. The land surrounding DPG is predominantly used for grazing. All land within a radius of approximately 4.5 miles of Building 3445 is located within DPG boundaries (**Figure A1-15**).

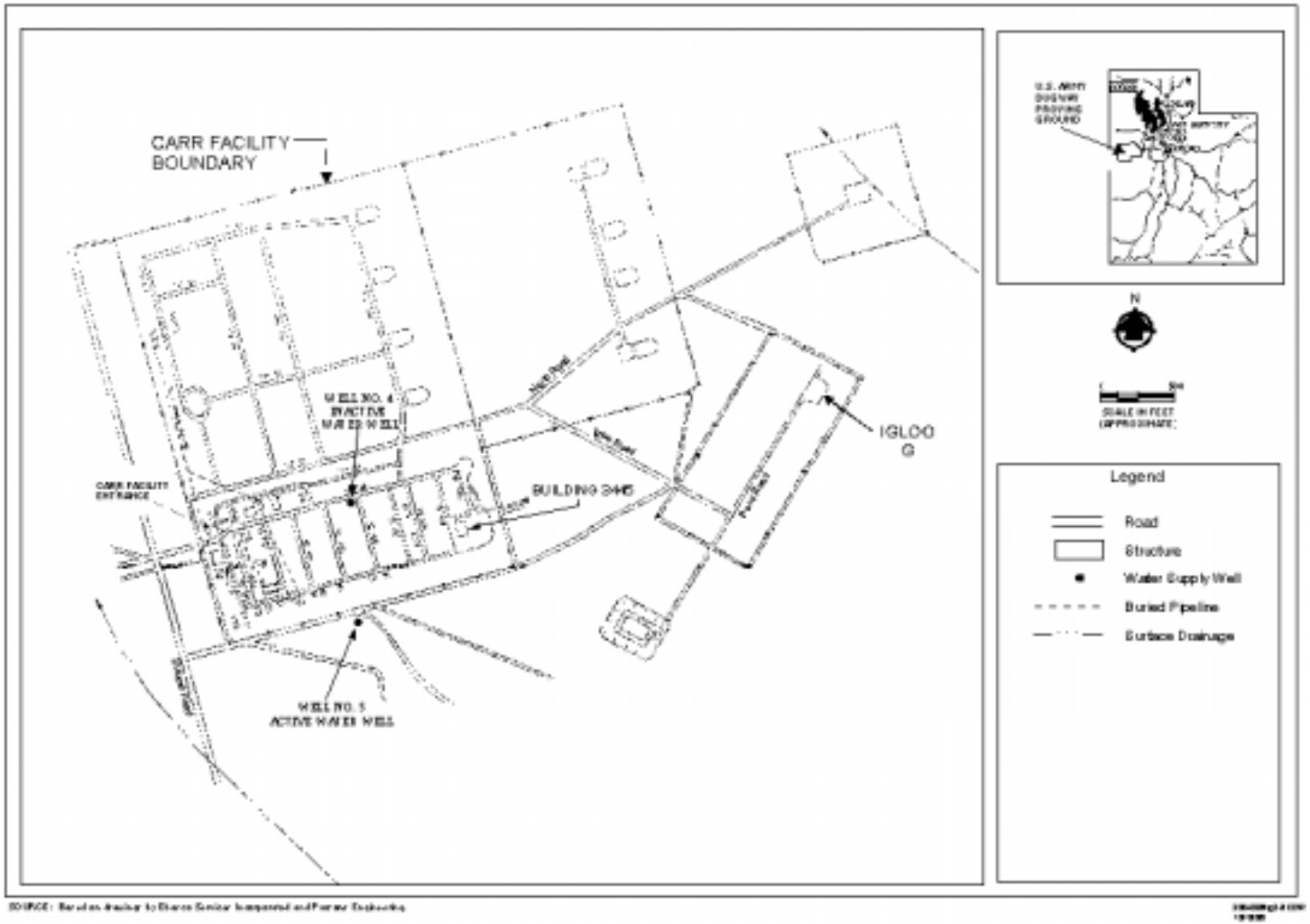


Figure A1-8. Groundwater Wells in the Vicinity of the Carr Facility

Figure A1-9. Carr Facility Water System

Figure 2-10. Carr Facility Electrical System

Figure 2-11. Carr Facility Communications System

Figure 2-12. Carr Facility Wastewater System

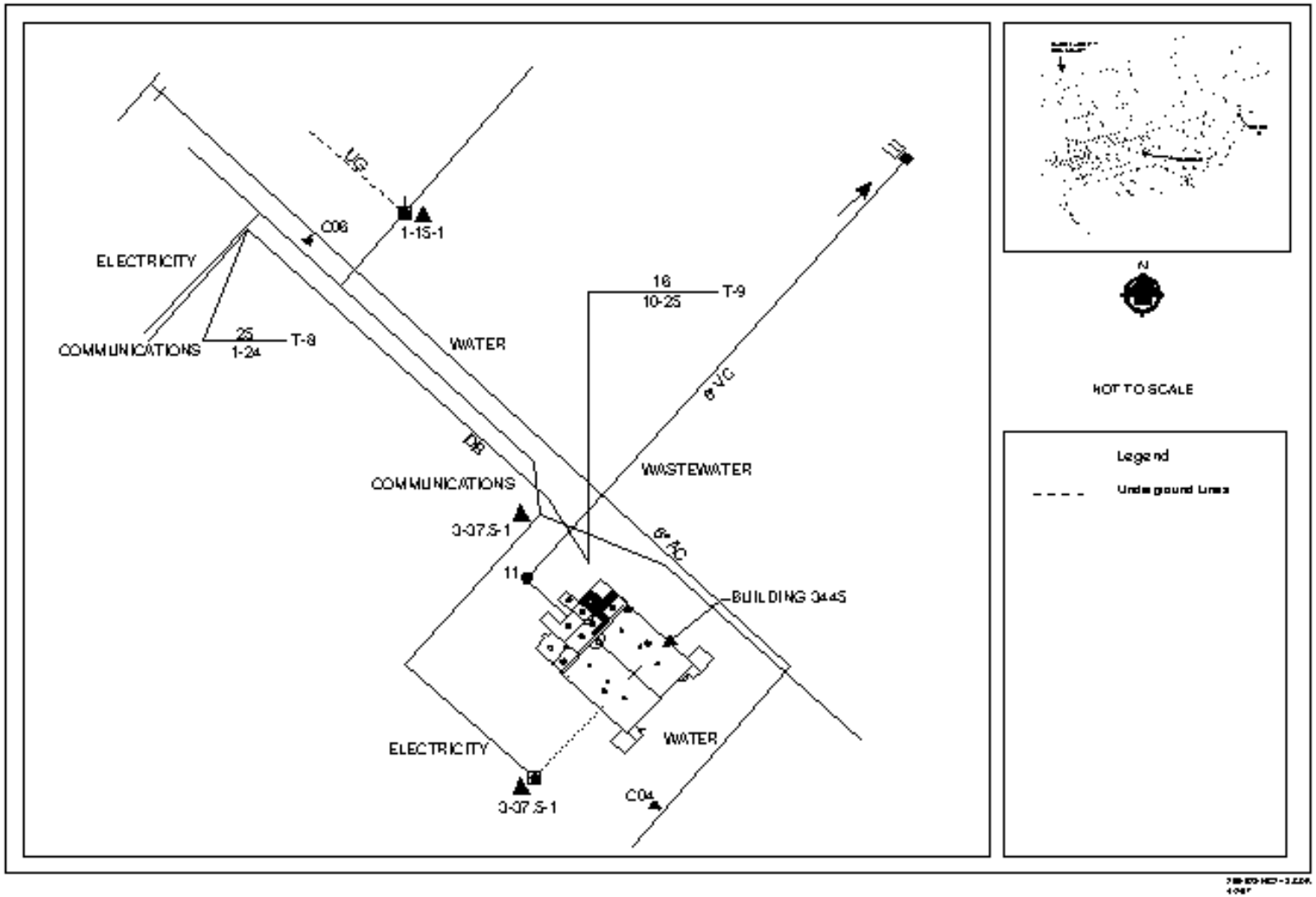
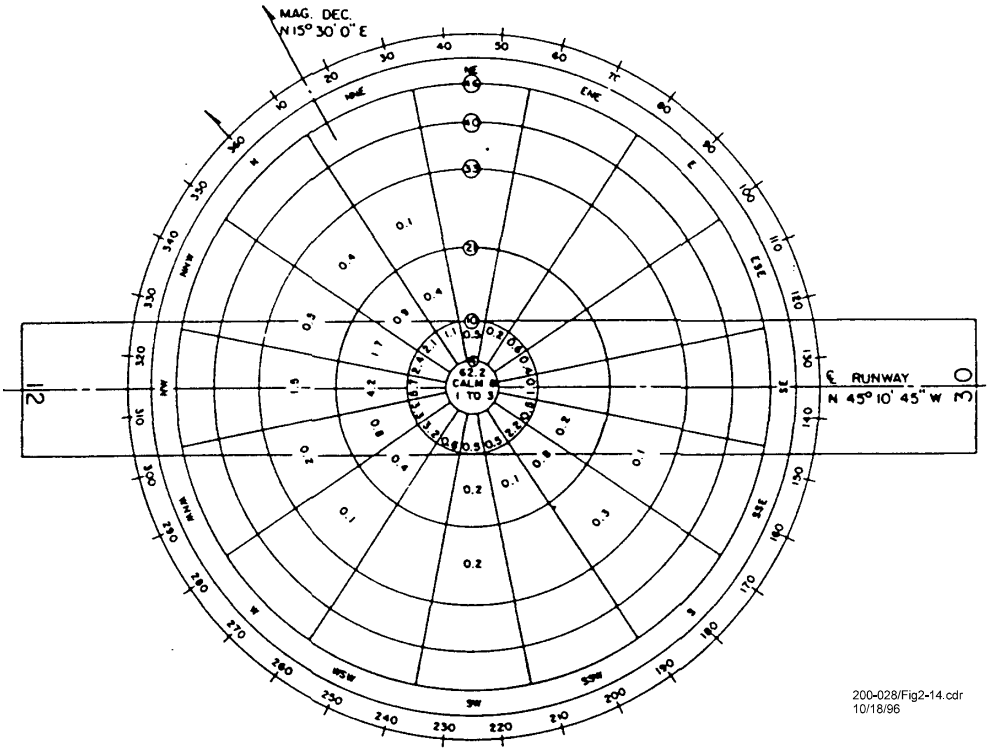


Figure 2-13. Utilities for Building 3445, Carr Facility



Source: Dugway Proving Ground Resource Conservation and Recovery Act (RCRA) Part B Permit Application for the Central Hazardous Waste Storage Facility

SURFACE WIND ROSE

Maximum Percentage of Wind Coverage, Based on a 13 M.P.H. Crosswind Component: 96.6%

Velocity Groups
- 0-3 MPH 62.2%
- 4-10 MPH 24.7%
- 11-21 MPH 9.8%
- 22-33 MPH 3.3%
- 34-40 MPH 0.0%

Total Observations:
- Period of Record: 1943-1945 and 1949-1967
- Where Observed: Ditto Weather Station
- Scale: 0.1 = 2 M.P.H.

Note:
- Wind percentages do not total 100% due to machine run data in which all figures are rounded to nearest 0.1% causing some fractional parts to be dropped.

Average Daily Temperature During Hottest Month: 94 F or 34.3 C.

Figure A1-14. Wind Rose for Dugway Proving Ground

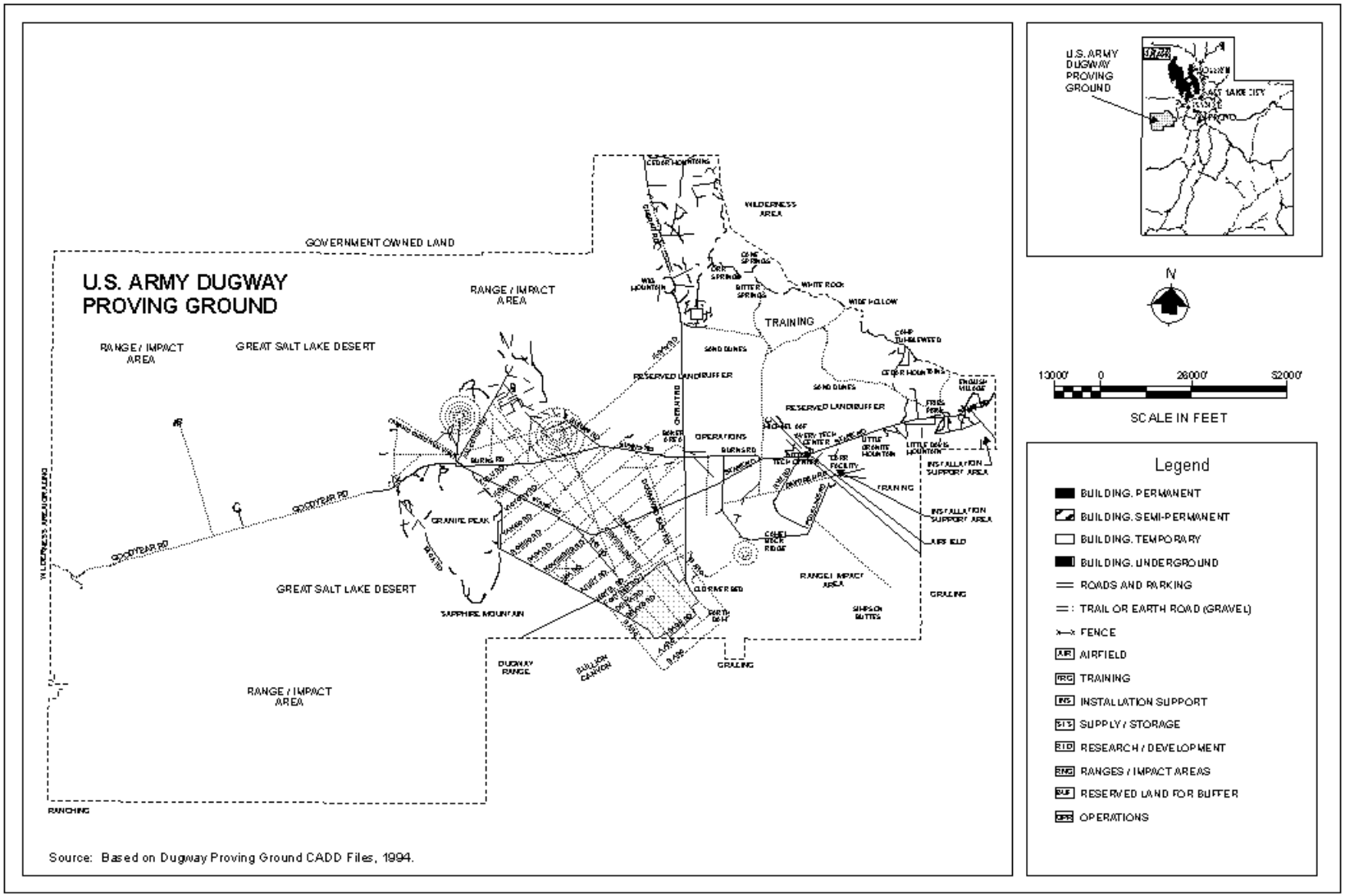


Figure A1-15. Installation Land Use

A1.4.3 100-Year Flood Plain Standard [40 CFR 264.18(b); R315-8-2.9]

A national Flood Insurance Rate Map (FIRM), identifying the boundary of the 100-year flood plain, has not been prepared for DPG. There are no permanent streams or other surface waters on DPG, however. Surface water from precipitation flows through well-established drainage channels into the flat plain and evaporates. Like other arid regions, DPG is subject to flash flooding following heavy precipitation. Flash floods have occurred only four times in the history of DPG: in 1944, 1952, 1973, and 1983. The major area affected during flash floods has been the Government Creek drainage channel, which has overflowed and caused minor inundation of roads at Ditto Technical Center. During periods of high water, the flow in the Government Creek channel is restricted by the culvert at Stark Road, which causes the area south of the road to flood. The flooding is not near any hazardous waste management unit, less than 90 day storage area, or other hazardous waste accumulation areas.

To evaluate the potential for flooding at the hazardous waste management units, the available FIRMs for areas within Tooele County, including location factors (for example, topographic and geographic distances from known flood areas and the nearest large drainage way, Government Creek), were analyzed. The FIRMs available for five communities in Tooele County (Stockton, Tooele, Vernon, Rush Valley, and Wendover) show that the maximum width of the 100-year flood plain for any drainage way, perennial or ephemeral, is less than 1,000 feet.

Government Creek is expected to behave similarly to other drainage ways in the area. Building 3445 resides in the Carr Facility, which is located approximately 1.5 miles from Government Creek. It is unlikely, therefore, that a 100-year flood of Government Creek would affect Building 3445.

A1.4.4 Seismic Standard [40 CFR 264.18(a); R315-8-2.9]

Although Utah is tectonically active, most earthquake activity occurs about 55 miles to the east along the Wasatch Range foothills. The U.S. Geological Survey has conducted a study (Reference B.1 of the *Dugway Proving Ground RCRA Part B Permit Application for the Central Hazardous Waste Storage Facility*) to determine the distribution, relative age, and amount and extent of surface rupture on Quaternary fault scarps in the Tooele 1^0 by 2^0 quadrangle in northwestern Utah. The study concluded that morphologic and geologic data collected in the area indicate that all the fault scarps were formed during the late Pleistocene era, with no clear evidence of Holocene surface faulting. Several faults inferred from geophysical evidence are located on DPG; however, there is no evidence of displacement during Holocene time.

Exhibits B-11, B-12, and B-13 of the *Dugway Proving Ground RCRA Permit* display the geophysical data from a regional gravity survey conducted in the Camel Back Ridge Area, which indicate potential subsurface faulting. No evidence of these inferred faults exists at the surface in the area of the Carr Facility, however, and the inferred faults do not exhibit evidence of displacement in Holocene time. Building 3445 is located approximately 1 mile from the regional faults. **Figure 2-16** shows the location of the Carr Facility in relation to the regional inferred faults.

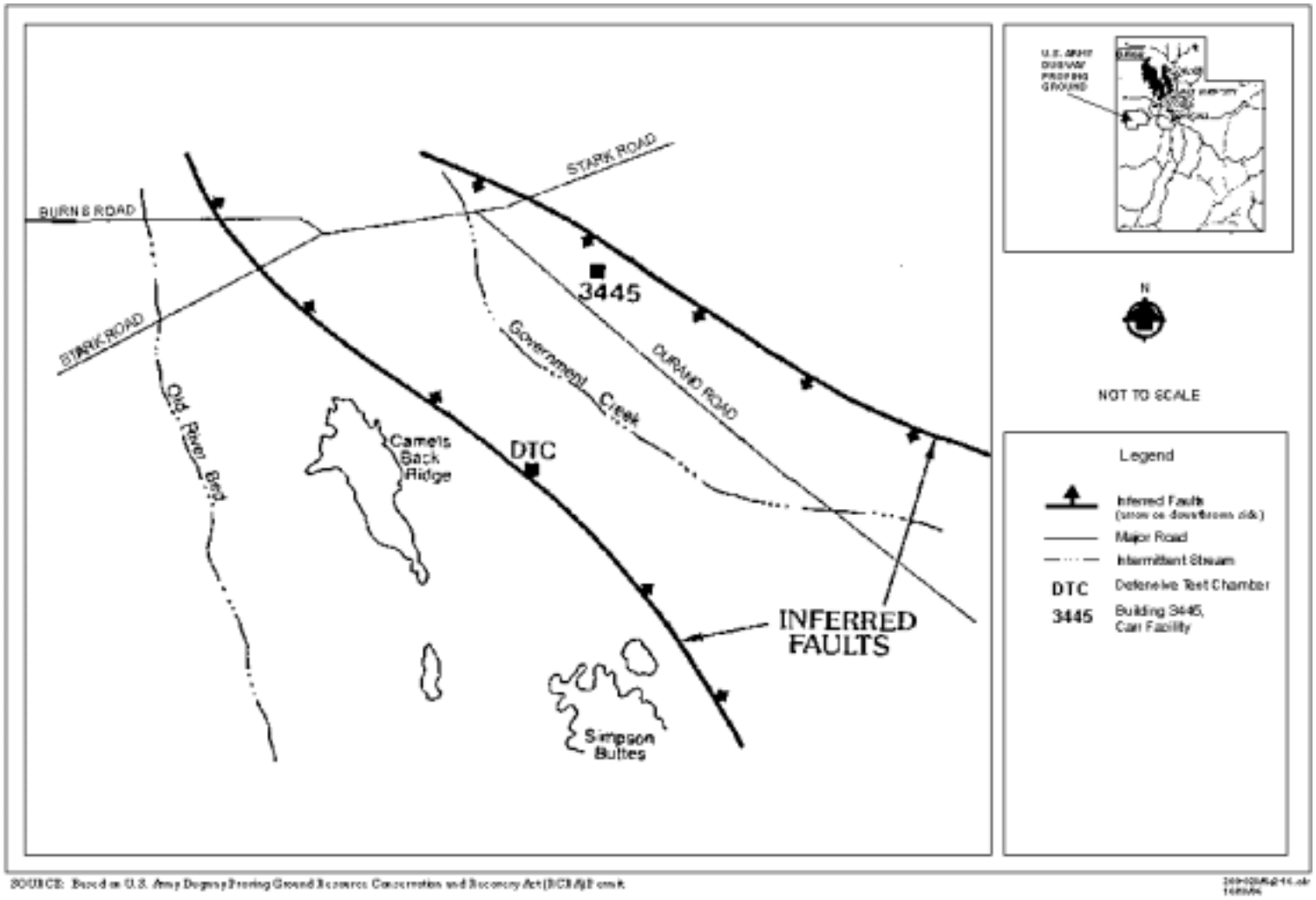


Figure A1-16. Location of Building 3445 in Relation to the Regional Inferred Faults